

IN THE CLAIMS:

15. (Presently Amended) A MOS device comprising:

C1 a gate structure on a semiconductor substrate, the gate structure having an upper layer of a hard mask material, the hard mask material being contoured such that it varies in thickness across the gate structure, and wherein the thickness of the hard mask terminates at a periphery of the gate structure; and

a halo implant in the semiconductor substrate, the halo implant having a depth profile under the gate structure which follows at least a portion of the contour of the hard mask layer.

21. (Previously Added) The device of Claim 15 wherein the hard mask layer is substantially dome-shaped.

C2 22. (Previously Added) The device of Claim 15 wherein the hard mask layer contour has a top portion and side portions, wherein the depth profile of the halo implant under the gate structure follows the side portions of the hard mask layer contour.

23. (Previously Added) The device of Claim 22 further including a channel defined between regions of the halo implant, the regions defined by the depth profile following the side portions of the hard mask layer.

24. (Presently Amended) The device of Claim 15 wherein the hard mask has a maximum thickness at a mid-point thereof and a minimum thickness at a periphery thereof

25. (Presently Amended) The device of Claim 24 ~~wherein the minimum thickness is about zero~~ further including spacers located on the sides of the gate structure and contacting the hard mask within the periphery of the gate structure.

26. (Previously Added) The device of claim 15 wherein a depth of the halo implant under an edge of the gate structure is substantially equal to a maximum thickness of the hard mask layer.

27. (Previously Added) The device of Claim 15 wherein the depth of the halo implant is substantially zero under a midpoint of the hard mask layer.

C2 28. (Previously Added) The device of Claim 27 wherein the depth of the halo implant is zero under the midpoint of the hard mask layer.

29. (Previously Added) The device of Claim 15 wherein the gate structure includes a layer of tungsten silicide between the hard mask layer and the substrate.

30. (Previously Added) The device of Claim 15 wherein the gate structure includes a layer of polycide between the hard mask layer and the substrate.
